What is claimed is:

1. A cylindrical roller bearing comprising:

an inner ring having a raceway on an outer circumference thereof;

an outer ring having a raceway on an inner circumference thereof;

a plurality of cylindrical rollers disposed to roll freely between the raceway of the inner ring and the raceway of the outer ring;

flange portions being disposed on both sides respectively of the raceway of at least one of the inner ring and the outer ring; and

a recess groove disposed at a corner portion where a flange surface of at least one of the flange portions of both sides and the raceway meet, the flange surfaces being inclined at the same angle from a base end portion to a tip end portion thereof, wherein

a radial dimension $h_3$ of chamfers formed on outer circumferential edge portions of the cylindrical rollers is set smaller than a radial height $h_1$ from the raceway near the recess groove, curved portions being formed between the chamfers and end surfaces of the cylindrical rollers.

2. The cylindrical roller bearing according to claim 1, wherein the curved portions are regulated to be a shape

wherein the following expressions are satisfied:

$$0.8 \leqq h_2/h_1$$

$$1 \leqq \tan^{-1} [\delta / (h_2 - h_3)] \ (^\circ)$$

where $h_1$ is a radial height from the raceway near the recess groove, $h_2$ is a radial dimension from the roller surfaces of the cylindrical rollers to a boundary between the curved portions and the end surfaces, $h_3$ is a radial dimension of the chamfers of the cylindrical rollers, and $\delta$ is an axial dimension from a boundary between the chamfers and the curved portions to the end surfaces of the cylindrical rollers.

3. The cylindrical roller bearing according to claim 1, wherein the curved portions are formed by processing wherein a flexible hone contacts in a slightly inclined state with respect to the end surfaces of the cylindrical rollers.

4. The cylindrical roller bearing according to claim 2, wherein the curved portions are formed by processing wherein a flexible hone contacts in a slightly inclined state with respect to the end surfaces of the cylindrical rollers.

5. The cylindrical roller bearing according to any one of claims 1 to 4, being incorporated in a main spindle assembly of a machine tool.